

February 3, 2024

Via regulations.gov

U.S. Environmental Protection Agency
EPA Docket Center
Office of Land and Emergency Management Docket
Mail Code 28221T
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: Request for Comments on Draft National Strategy for Reducing Food Loss and Waste and Recycling Organics (EPA-HQ-OLEM-2022-0415)

The undersigned organizations appreciate the opportunity to comment on the Environmental Protection Agency (EPA), U.S. Department of Agriculture (USDA), and Food and Drug Administration (FDA) *Draft National Strategy for Reducing Food Loss and Waste and Recycling Organics* ("draft Strategy"). These organizations represent businesses that produce frozen foods and utilize frozen warehouses and transportation to safely distribute frozen foods. Freezing and frozen foods play a vital role in any national strategy aimed at prevention and reduction of food loss and waste. In these comments, we delineate key steps such a strategy should immediately undertake to build needed infrastructure to galvanize food waste reduction efforts across the frozen food supply chain.

The American Frozen Food Institute (AFFI) represents manufacturers, distributors, and suppliers at publicly traded, privately held, and family-owned companies that help produce frozen foods for today's food service and retail marketplace and serve as economic pillars within their communities throughout the United States. AFFI member products improve access to nutritious foods and address nutrition insecurity, while reducing food waste in the U.S.

The Meat Institute is the leading voice for the meat and poultry industry and has a rich, century-long history. The Meat Institute provides essential member services including legislative, regulatory, scientific, international, and public affairs representation. Together, the Meat Institute's members produce the vast majority of U.S. beef, pork, lamb, and poultry, in addition to the equipment, ingredients, and services needed to produce the safest and highest quality products.

The National Fisheries Institute (NFI) is the nation's largest seafood trade association and represents every facet of the commercial seafood supply chain representing including harvesters, vessel owners, processors, exporters, importers, distributors, retailers and seafood restaurants. NFI members utilize a mixture of domestic and globally sourced raw material to meet the nation's need for wholesome, sustainable seafood.

The National Pork Producers Council (NPPC) advocates for the social, environmental, and economic sustainability of U.S. pork producers and their partners by fighting for reasonable public policy, defending our freedom to operate and expanding access to global markets. NPPC represents one of the most dynamic and competitive sectors of U.S. agriculture. The U.S. pork industry represents a significant value-add to the agricultural economy and a major contributor to the overall U.S. economy.

The Washington Red Raspberry Commission (WRRC) was formed in 1976 to support and promote the raspberry industry. The WRRC operates programs that facilitate cultural and harvesting improvements, in addition to regulating unfair trade practices within the industry. It also establishes promotion plans and conducts programs for advertising, sales, promotion and other programs for maintaining present markets as well as creating new or larger markets for raspberries, and it provides for research in the production and processing of raspberries.

The Global Cold Chain Alliance (GCCA) represents all major industries engaged in temperature-controlled warehousing, logistics and transportation. GCCA unites all partners to be innovative leaders in the movement of perishable products globally.

Executive Summary

We appreciate the work EPA, USDA, and FDA (the “agencies”) have done to date and are supportive of the draft Strategy. The national goals to reduce food loss and waste by 50% and achieve a 50% recycling rate by 2030 are ambitious, complex, very challenging, and will require coordination and effort across many stakeholders. The frozen food industry is ready and eager to collaborate with the administration to work toward achieving these goals.

To that end, it is critical to consider the role of frozen foods in a national strategy. Indeed, “freezing” is among the most ancient and natural methods of food preservation, designed to maintain nutritional value, taste, and texture.¹ Freezing uses temperature to preserve foods; preservatives are not added to aid the freezing process or increase the shelf life of frozen foods. A framework inclusive of frozen foods is appropriate, necessary, and supported by the following points:

1. Frozen foods extend the shelf life of foods to allow for the reduction of waste at food service, retail, and particularly at the consumer level.
2. More and enhanced cold-chain infrastructure is needed both to ensure frozen foods are available for all consumers and to extend the shelf life of otherwise perishable products that may otherwise contribute to food loss at the farm production level.

¹ Custavo V. Barbosa-Canovas et al., Freezing of fruits and vegetables: An Agri-Business Alternative for Rural and Semi-Rural Areas, FAO Agricultural Services Bulletin 158 (2005), available at <https://www.fao.org/3/y5979e/y5979e00.htm#Contents>.

3. Frozen foods provide affordable access to easy-to-prepare, nutrient-dense foods and play an essential role in promoting health equity.
4. The agencies should continue to consider how to reduce food loss and waste associated with food recalls.

We address each of these points, as well as recommendations for future research, in more detail in the comments that follow.

Detailed Comments

1. *By extending shelf life while retaining nutrient value, frozen foods allow for the reduction of waste at the food service, retail, and consumer level*

We support the agencies' proposal to develop, launch, and run a national consumer education and behavior change campaign, and strongly recommend the campaign include the ways frozen foods reduce food waste. Frozen foods provide increased stability, variety, and ease of preparation to consumers. As the draft Strategy acknowledges, a circular economy means efficient use of raw materials and obtaining the highest value from them.² Freezing preserves and extends the shelf life of a range of food products – such as produce, prepared meals, baked goods, and proteins such as meat, poultry, and seafood – thus protecting their nutritional content and quality and stretching the American dollar spent on food and nutrition further.

Retail level studies show that frozen food is wasted less than fresh food. Although the ratio of fresh to frozen waste rates varies among different types of products, items in fresh produce departments are discarded nearly six times more than items sold frozen.³ Food waste in the U.S. is estimated at between 30-40% of the food supply,⁴ with about one-third of that waste occurring in homes and equating to roughly \$1500 of food wasted on average per family each year.⁵

Freezing is a food waste prevention solution. It allows for a longer shelf life, and pre-portioned foods help reduce the likelihood that leftovers will go to waste. In a 2022 study conducted by AFFI, consumers reported that frozen foods help them reduce their waste and save money, and that having frozen meal ingredients on hand helps to have more food in the house without the threat of perishability and

² *Draft National Strategy for Reducing Food Waste and Recycling Organics* (December 2023), p. 1.

³ Cornell University, SC Johnson College of Business, *A Critical Review and Meta Analysis of the Rates of Frozen Food Waste at the Retail and Consumer Levels* (2023), available at https://frozenadvantage.org/wp-content/uploads/2023/05/Study-Conclusions_Frozen-Food-Waste_Cornell-Feb-2023.pdf.

⁴ USDA, *Food Waste FAQs*, <https://www.usda.gov/foodwaste/faqs>.

⁵ Brian E. Roe, *Americans waste close to one-third of all food purchases—the equivalent of 1,250 calories a day. Here's a breakdown of how bad it is* (Dec. 12, 2022), <https://fortune.com/2022/12/12/how-much-food-do-americans-waste-every-year-one-third/>.

risk of spoilage.⁶ Some of the top reasons consumers reported throwing out food were spoilage and excess leftovers – both of which frozen food can help address. With increased access to frozen foods, a family can reduce its financial and environmental waste due to the longer shelf life frozen foods offer and the ability to prepare only what the family will consume at a given eating occasion.

Frozen foods also support reduced food loss and waste across the food chain, including at distribution and retail. Freezing is a powerful tool to limit food loss during post-harvest, processing, and transportation and can extend the marketability of products that otherwise might not meet visual or physical specifications required by grocery stores. A 2023 critical review conducted by Cornell University found that, in general, frozen food is wasted less frequently than its fresh counterparts at retail stores and in households.⁷ Finally, frozen products in food service provide these businesses with a similar opportunity to reduce their waste with convenient pack sizes and extended storage.

2. *Cold and frozen storage infrastructure is necessary for food to reach more consumers and extend the shelf life of perishable items to reduce food loss among farmers*

Unique attention must be given to sectors of the food supply chain involved in extending the shelf life of food products. Additional and better cold-chain infrastructure is needed to maximize the benefits of freezing foods to reduce food loss and waste. As the draft Strategy acknowledges, there is insufficient cold chain infrastructure. We agree that funding equipment and infrastructure to properly store and to extend food's usable life, as well as to distribute wholesome food to emergency food assistance organizations is a national priority. Cold chain capacity, including refrigeration and freezer storage, needs to be improved across the supply chain – from the farm level to the food banks and community organizations that are vital to ensuring food security in underserved areas.

We agree with the draft Strategy's emphasis on the importance of providing fruits and vegetables to emergency food assistance organizations.⁸ Since frozen vegetables provide the same level of nutrition as raw produce, we urge the agencies to remove the distinction of "raw" or "fresh" as compared to "frozen" fruits and vegetables throughout the Strategy.

We applaud the many initiatives the agencies have started and urge them to build on the work done so far:

⁶ Frozen Food Waste Study, American Frozen Food Institute (2022), available at <https://frozenadvantage.org/wp-content/uploads/2023/05/Consumer-Food-Waste-Survey.pdf>.

⁷ Cornell University, SC Johnson College of Business, A Critical Review and Meta Analysis of the Rates of Frozen Food Waste at the Retail and Consumer Levels (2023), available at https://frozenadvantage.org/wp-content/uploads/2023/05/Study-Conclusions_Frozen-Food-Waste_Cornell-Feb-2023.pdf.

⁸ *Draft National Strategy for Reducing Food Waste and Recycling Organics* (December 2023), p. 4.

- Educational Activities and Improving Frozen Storage Capacity: We urge USDA to expand frozen and cold storage in schools through its Food and Agriculture Learning Program (FASLP) grants for food loss and waste reduction on school grounds. Additional frozen storage in schools provides children access to nutrient dense, cost-effective food while helping schools reduce food waste, thereby taking full advantage of their food purchases.
- Farm and Agriculture Initiatives: We support the USDA Farm Service Agency's (FSA) Farm Storage Facility Loan Program that provides low-interest financing so producers can build or upgrade facilities to store commodities and increase their shelf life. At the farm level, investing in cold storage that is more mobile and could be used "in the field" would greatly expand the ability of growers to preserve and sell more of their products and reduce food loss. We urge the agency to continue and enhance this service and are eager and willing to serve as a partner. We also appreciate the USDA National Institute for Food and Agriculture (NIFA) investments, including the partnership with the Sustainable Agriculture Research and Education (SARE) program, to increase training and technical assistance efforts to develop food loss and waste initiatives. We urge USDA to include cold storage development among the food loss and waste initiatives of this program.
- Excess Food Opportunities Map: We support EPA's decision to refine and expand on food donation infrastructure data in the Excess Food Opportunities Map. As you expand and refine the map, we recommend including food processing facilities, as well as information for access to cold and frozen storage.

We appreciate the work that has been done and reiterate the necessity of cold chain storage in expanding the effectiveness of freezing food for reducing food loss and waste throughout the food supply chain.

3. USDA, EPA, and FDA Should Recognize the Relevance of Frozen Foods in Achieving Health Equity

Consistent with the draft Strategy's goal of reducing barriers to improve food access and affordability, the agencies should recognize the role that frozen foods play in supporting health equity and availability of products such as produce, quality finished meals and proteins.⁹

Diet-dependent health conditions in our country are prevalent and persistent, including overweight, obesity, and chronic diseases (e.g., cardiovascular disease, type 2 diabetes, and cancer), to the extent that six in 10 Americans have one of these chronic conditions and four in 10 have two or more.¹⁰ Food and nutrition

⁹ *Draft National Strategy for Reducing Food Loss and Waste and Recycling Organics* (December 2023), p. 4.

¹⁰ National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). Available at: <https://www.cdc.gov/chronicdisease/index.htm>.

insecurity is all too prevalent, and disproportionately affects vulnerable populations (e.g., low-income, Black, and Hispanic Americans).¹¹

Frozen foods provide a conduit to healthy eating. Menu modeling shows that diets featuring 95 percent frozen foods (90 percent of calories) can meet MyPlate food group recommendations for grains, fruits, and vegetables, as well as nutrient recommendations for calories, fat, saturated fat, sodium, fiber, vitamin A, vitamin C, and calcium.¹² Moreover, studies show that frozen fruits and vegetables are as rich in nutrients as, and in some cases more so than, fresh produce.¹³

According to the 2020 Dietary Guidelines Advisory Committee report, higher intake of dietary fiber, which can be achieved by fruit and vegetable consumption, is associated with lower levels of coronary heart disease, but 85% of Americans do not eat recommended amounts of these food groups.¹⁴ Importantly, however, an analysis of National Health and Nutrition Examination Survey (NHANES) data reveals that frozen fruit and vegetable consumers eat more total fruits and vegetables than those who do not consume frozen fruits and vegetables.¹⁵ This is consistent with research that shows that availability and preparation of all forms of fruits and vegetables, including frozen, in the home is associated with greater produce consumption overall.¹⁶ Frozen foods thus offer a way to increase consumption of these critical recommended food groups.

A recent USDA study identified barriers faced by Supplemental Nutrition Assistance Program (SNAP) participants that prevent them from having access to a nutritious diet. The most commonly identified barriers were the affordability of food, as well as a lack of cooking skills and lack of time to prepare food.¹⁷ At the same time,

¹¹ Food Security and Nutrition Assistance, USDA Economic Research Service. Available at: <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/interactive-charts-and-highlights/>.

¹² Hornick, Betsy. Menu Modeling Demonstrates Feasibility, Nutritional Value and Affordability of Frozen Foods. *Today's Dietitian*. November 2015 Supplement. <http://viewer.zmags.com/publication/1b2da3ad#/1b2da3ad/1>.

¹³ Bouzari A, Holstege D, Barrett DM. Vitamin retention in eight fruits and vegetables: a comparison of refrigerated and frozen storage. *J Agric Food Chem*. 2015;63(3):957-962. doi:10.1021/jf5058793; Bouzari A, Holstege D, Barrett DM. Mineral, fiber, and total phenolic retention in eight fruits and vegetables: a comparison of refrigerated and frozen storage. *J Agric Food Chem*. 2015;63(3):951-956. doi:10.1021/jf504890k; Li, Linshan & Pegg, Ronald & Eitenmiller, Ronald & Chun, Ji-Yeon & Kerrihard, Adrian. (2017). Selected nutrient analyses of fresh, fresh-stored, and frozen fruits and vegetables. *Journal of Food Composition and Analysis*. 59. 10.1016/j.jfca.2017.02.002.

¹⁴ Dietary Guidelines for Americans, 2020-2025. Available at https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf.

¹⁵ Storey M, Anderson P. Total fruit and vegetable consumption increases among consumers of frozen fruit and vegetables. *Nutrition*. 2018;46:115-121. Doi:10.1016/j.nut.2017.08.013.

¹⁶ Produce for Better Health Foundation. *Novel Approaches to Measuring and Promoting Fruit and Vegetable Consumption*, 2017. Available at: <https://fruitsandveggies.org>.

¹⁷ *Barriers that Constrain the Adequacy of Supplemental Nutrition Assistance Program (SNAP) Allotments*. 2021. Available at: <https://fns-prod.azureedge.us/sites/default/files/resource-files/SNAP-Barriers-Summary.pdf>.

eight out of 10 SNAP-eligible respondents in a [national survey](#) in 2022 agreed that frozen fruits and vegetables make it easier to eat more produce, prevent food waste and help save money.¹⁸ Many SNAP-eligible households also separately [identified](#) that they cannot afford to waste food and reported that frozen foods help them help them save money because they are able to use the food over time without it going to waste.¹⁹ The data show that frozen foods both help underserved populations access varied, balanced and nutrient-dense foods and save them money due to the reduced food waste. Frozen foods play a critical role providing affordable access to varied, balanced, and nutrient dense foods that are quick and easy to prepare and store, while reducing waste. For e.g., resealable bags and portion balanced meals available in the frozen category align with tactics already outlined in the draft strategy.

We agree with USDA about the challenges that must be overcome to prevent food loss and waste. Regarding the limited outreach and education on this issue thus far, USDA has an opportunity to educate SNAP participants that frozen foods represent an important food waste reduction solution. Federal feeding programs should recognize that freezing plays a vital role in ensuring access to food that is safe, nutritious, accessible across the country, and allows for consumer choice. Federal feeding programs that support a variety of food options, including frozen, will support nutrition equity and help the populations lacking readily available access to nutritious food, particularly those in rural and vulnerable communities.

4. *FDA should continue to consider how to reduce food loss and waste associated with food recalls*

We appreciate the recognition of the role the new Era of Smarter Food Safety Blueprint and Tech-Enabled Traceability could play in reducing food waste. At the same time, the rule is complex and will require time and significant resources for implementation. Therefore, we urge FDA to continue to work with stakeholders to implement the new Traceability Rule in as practical a way as possible. Additionally, we urge the agencies to consider other mechanisms for reducing food loss and waste associated with food recalls. For example, we request that the draft Strategy consider reconditioning as a viable means for reducing food waste and preventing recalled food from ending in landfills. This is particularly important as the EPA has recently identified the outsized climate impacts from decomposing organic food waste in landfills. USDA and FDA should both develop and expand access to reconditioning technologies for food producers and manufacturers.

Under the 2011 *Food Safety Modernization Act* (FSMA), a risk-based preventive control approach to food safety means that risk management should be an integral component of the food manufacturers' overall food safety program as well as serve as the basis of food safety regulatory policies. Yet, many food recalls remain

¹⁸ <https://affi.org/consumers-agree-its-easier-to-eat-more-produce-and-reduce-food-waste-with-frozen-fruits-and-vegetables-on-hand/>

¹⁹ <https://affi.org/new-research-reveals-frozen-foods-role-in-reducing-food-waste/>

tethered to a hazard-based approach where sometimes agencies may seek product withdrawals or prevent products from entering commerce, without a sufficient risk analysis to indicate public health risk from consumption. Modernizing regulatory thinking to take a risk-based approach in making recall decisions is an important consideration as it relates to preventing food loss and waste. In the current paradigm, if food is deemed adulterated with a foodborne pathogen, food safety policies may even preclude diversion to animal feed or reprocessing. Ultimately recalled foods must be destroyed and destined to landfill. A recent U.S. Environmental Protection Agency (EPA) report estimated that wasted food causes 58% of methane emissions from municipal solid waste landfills.²⁰

As an example, to better reflect on the need for regulatory convergence and drive policies with an appreciation for their impact on food waste, one needs to look at current U.S. *Listeria monocytogenes* regulations. Current regulatory policies apply a zero-tolerance approach across all foods with no distinction between high-risk foods that support the growth of this pathogen and low-risk foods that do not support growth. The absence of a risk-based approach means that any positive *L. monocytogenes* found in any food and at any level is discarded, regardless of any consideration of risk factors. Both agencies, particularly the FDA, have an opportunity to reflect more risk-based approaches in their regulatory approach as they revise policies to address this pathogen and their unintended but deep implications for preventing food waste.

5. *Additional research is needed to understand and identify opportunities to reduce food loss and waste*

We agree with the agencies that there are obstacles to estimating food loss and waste, as well as limited fundamental research funding. Based on our firsthand experience, we understand that data collection and analysis of food waste is a complex topic, particularly across varied food categories. The draft Strategy should continue supporting research efforts that seek to identify best practices in collecting data about the level of consumer food waste. It should encourage food waste data to also consider how the food was stored in addition to the food types. For example, while fruit and vegetable waste rates are typically reported as higher than for other food types, the rates of waste among fruits and vegetables that are frozen or stored in ways that increase their shelf life are often significantly lower. The U.S. has a unique opportunity to set standards and best practices as stakeholders worldwide approach diverse questions to better understand food loss and waste, establish reference points and benchmarks, and conduct and report comparative analyses. AFFI also urges the agencies consider funding research in the following areas:

Food Waste as a Component of Life Cycle Assessment (LCA): Improving the LCA efficiency of each step in the conversion of a raw material in the supply chain into a food that is consumed is critical. As important is the potential efficiencies that can be achieved by limiting food waste at the end of the supply chain. Consumer level food waste contributes to and impacts the overall sustainability profile of food

²⁰ <https://www.epa.gov/land-research/quantifying-methane-emissions-landfilled-food-waste>

products, but such data are seldom considered. When viewed from the lens of greenhouse gas (GHG) emissions, food waste is an important component of a food product's LCA, and the Draft Strategy should encourage incorporation of food waste rates at the consumer and retail level into these analyses.

- Food waste rates of particular products: The data currently available through the ERS Loss-Adjusted Food Availability (LAFA) Data Series is important for understanding the rate of food loss and waste rates among retailers and consumers but the data currently available on frozen products needs a significant update. Among other benefits, investing in more accurate data would enable this data to be incorporated into LCAs appropriately.
- Date Labeling: Food labeling, and date labeling in particular, might be the single most dominant cause of discarding frozen foods, even though these foods do not present food safety risks when stored beyond the best-by dates in the freezer. In one study evaluating why consumers waste food, the greatest number of respondents said for food from the freezer it was because 'the expiry date had passed' (38%) and/or 'the product was forgotten' (32%).²¹ Date labeling, and consumer perception of date labeling, is a critical element to understanding and reducing food waste at the consumer level. Industry has expertise to offer alongside USDA and FDA on this issue. AFFI supports the consistent application of nomenclature for quality and safety date labeling in frozen food and beverage products. We urge the government to fund research that builds on the existing research on the impact of date labeling on food waste, as well as the effectiveness of date labeling education campaigns on consumers. One technological opportunity is to transition from the use of shelf life based labels on food packages to real-time shelf life indicators, an initiative likely to better assist consumers in reducing food waste.
- Return on Investment for Frozen Foods as a Solution for Waste Reduction: We appreciate USDA's willingness to support research that provides estimates of the returns on investment (ROI) for food loss and waste reduction activities. We encourage such research to include evaluating the economic and environmental (and nutritional) benefits of frozen foods (produce, prepared meals, meats, poultry, seafood, etc.) as compared to non-frozen foods in federal feeding programs such as WIC, GusNIP, school meals and produce distribution programs.
- Frozen Food Consumer Perception and Intervention: We support building on research on consumer habits and perception as it relates to frozen food and food waste.

²¹ Cornell University, SC Johnson College of Business, A Critical Review and Meta Analysis of the Rates of Frozen Food Waste at the Retail and Consumer Levels (2023), available at https://frozenadvantage.org/wp-content/uploads/2023/05/Study-Conclusions_Frozen-Food-Waste_Cornell-Feb-2023.pdf.

- First, additional research is needed on household knowledge and perception of freezing food and frozen food products, including questions as to whether consumers are freezing foods, buying frozen foods, discarding frozen foods, and whether they have access to frozen foods, and home freezing capacity, among others.
- Second, we support the development of an intervention campaign promoting either freezing of food and/or purchasing of frozen foods to promote a healthy diet and reduce food waste in the home. The campaign could be performed in partnership with freezer manufacturers to encourage the development of effective designs (e.g., see-through bins) and other freezer-friendly technologies. A separate intervention could include visual tools on packaging to assist consumers with understanding the value of frozen foods in reducing food waste.
- Food Packaging: We recognize the environmental challenge presented by single use plastics in food packaging and are encouraged and excited by USDA's commitment to research food packaging materials from biobased and renewable sourced polymers. We support this initiative and are eager to be partners. We ask that as USDA evaluates potential packaging solutions, the research includes temperature testing so that the packaging alternatives are appropriate for frozen foods.

We believe that through a collaborative partnership between industry and government, these research initiatives will help us get closer to reaching the waste reduction targets by 2030.

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We greatly appreciate the opportunity to submit these comments. Please do not hesitate to contact us with any questions.

Sincerely,

American Frozen Food Institute
 Global Cold Chain Alliance
 Meat Institute
 National Fisheries Institute
 National Pork Producers Council
 Washington Red Raspberry Commission